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JUL 25 2000

GROUP 3600

Official

FACSIMILE TRANSMISSION SHEET

TO : EXAMINER R. ADDIE  
COMPANY : UNITED STATES PATENT AND TRADEMARK OFFICE  
FAX PHONE : 703-308-8623

RE: United States Patent Application Entitled APPARATUS  
AND METHOD FOR THREE-DIMENSIONAL CONTOURING

Applicants : Carl B. Kieranen et al.  
Group Art Unit : 3673  
Serial No. : 09/351,502  
Filed : October 27, 1998

CONFIRMATION COPY WILL NOT BE MAILED

DATE SENT: July 24, 2000

PAGES SENT: 4 (including cover)

FROM : MATTHEW L. GOSKA  
TELEPHONE : 616-975-5500 (Main) FAX NO.: 616-975-5505

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PATENT  
File No. SOM01 P-302

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner : R. Addie  
Group : 3673  
Applicant(s) : Carl B. Kieranen et al.  
Serial No. : 09/179,648  
Filed : October 27, 1998  
For : APPARATUS AND METHOD FOR THREE-DIMENSIONAL  
CONTOURING

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

**Official****FAX RECEIVED**

JUL 25 2000

**GROUP 3600**PROPOSED AMENDMENT

Responsive to the Office Action mailed April 10, 2000, Applicants submit the following proposed amendment which should not be entered at this time. This proposed amendment is being submitted for purposes of discussion at the upcoming interview of July 26, 2000 at 9:00 a.m.

In the Claims:

## 19. A surface smoothing device comprising:

a contouring assembly having a first and second end, said contouring assembly adapted to be moved over an area to be contoured to contour at least one of material positioned on a reference surface and the material of the reference surface to a desired surface shape;

a stored profile of the desired shape of the surface;

a first sensing apparatus that uses a first method to sense[s] the position and height of said first end of said contouring assembly, the height of said first end of said contouring assembly being sensed without respect to the reference surface;

a second sensing apparatus that uses a second method to sense[s] the height of said second end of said contouring assembly, said second [sensing apparatus] method being [a] different from said first method [kind of sensing apparatus from said first sensing apparatus]; and

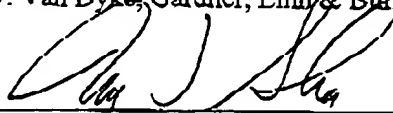
a controller that adjusts the height of said first end of said contouring assembly based on the position and height sensed by said first sensing apparatus and said stored profile and that adjusts the height of said second end of said contouring assembly based on the distance between said second end of said contouring assembly and a physical [form] reference adjacent and contouring assembly such as the reference surface and previously placed paved surface, a rail, a board, or a wire.

33. A surface contouring device for contouring a surface over a sub-grade comprising:
- a base;
  - a boom movably mounted on said base;
  - a contouring assembly mounted on said boom, said contouring assembly having a first end and a second end, said contouring assembly mounted on said boom for movement with respect to said base and adapted to smooth a surface while being moved on said boom while said base remains stationary; and,
  - a control system adapted to independently adjust the heights of said first and second ends of said contouring assembly as said contouring assembly moves whereby said contouring assembly is capable of smoothing a three dimensional surface, said control system including a first sensor that senses the height of said first end of said contouring assembly using a first method, and a second sensor that senses the height of said second end of said contouring assembly using a second method, said second method different from said first method [sensor being a different type of sensor from said first sensor], at least one of said first and second methods sensing the height of said first or second end of said contouring assembly without reference to said sub-grade.
54. A method for smoothing a surface over a sub-grade to a desired three dimensional shape, comprising:
- storing said desired three-dimensional shape in a computer memory;
  - providing a contouring assembly having a first and second end;
  - moving said contouring assembly over said three-dimensional surface to be smoothed;
  - using a first method [sensor] to determine the position of said first end of said contouring assembly in three dimensions as said contouring assembly moves, said position of said first end of said contouring assembly being determined without respect to the height of the sub-grade;
  - adjusting the height of said first end of said contouring assembly to correspond to the height of said desired three-dimensional shape;
  - using a second method [sensor of a different type than said first sensor] different from said first method to determine the height of said second end of said contouring assembly from a surface independently of the determination of the position of the first end of said contouring assembly; and
  - adjusting the height of said second end of said contouring assembly to maintain a constant height above said surface.

Respectfully submitted,

CARL B. KIERANEN ET AL.

By: Van Dyke, Gardner, Linn & Burkhardt, LLP



Date: July 24, 2000

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